

**WILLIAMS**

Serial No. 10/065,258

**REMARKS**

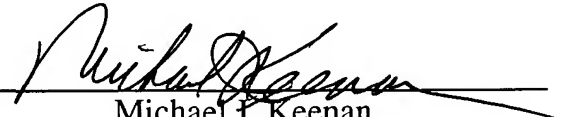
The above amendments were made to the place the application in better condition for examination.

Attached hereto is a marked-up version of the changes made to the specification and claim(s) by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_



Michael J. Keenan

Reg. No. 32,106

MJK:ljb  
1100 North Glebe Road, 8th Floor  
Arlington, VA 22201-4714  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION**

Paragraph [0021]:

Referring to Figures 1 and 2, the scintillation or crystal component [10] of the radiation detector 10 in the exemplary embodiment includes a machined crystal or scintillation element 12, preferably a sodium-iodide (NaI) crystal. Other suitable compositions for the crystal include anthracene, bismuth germanium oxide (BGO, cerium oxide (CeI), cesium iodide (CsI), gadolinium orthosilicate (GSO), lutetium orthosilicate (LSO) and other like substances. The crystal 12 receives radiation from the well bore, transforms the radiation into light impulses and transmits the light impulses to a photo-multiplier tube 72 that is attached to a forward end of the crystal component.

Paragraph [0022]:

The crystal 12 is initially wrapped with a reflective Teflon® tape 14. The forward, tapered end portion 16 of the crystal is shielded by a conically shaped gadolinium foil 18 (partially shown in Figure 2). A thin polyamide layer 20 is then wrapped about the cylindrical portion 22 of the crystal and secured by a 1/4" strip of Kapton tape 24.

Paragraph [0025]:

Referring again to Figure 2, the final assembly includes locating a coupler 52 at the forward end of the crystal 12, with silicon oil between the coupler and the front face

54 of the crystal. At the opposite or rearward end of the crystal, Teflon® tape discs 56, 58 are applied to the back or rear face of the crystal 12, with a boron nitride disc 60 and a gadolinium disc 62 sandwiched between the tape discs 56, 58, a compression plate 64, axial spring 66 and an end cap 68. This entire detector assembly is located within a [titaniumshield] titanium shield or housing 70, with axially extending radial springs 72 located radially between the SARCA assembly 26 and the shield 70. The end cap 68 is welded to the end of the shield 70, thereby holding all of the above components within the shield (or detector housing). The forward end of the shield 70 is threaded to facilitate attachment of a photo-multiplier tube 72 (Figure 1) in conventional fashion, and the combined detector may then be located in a tool housing (not shown).

### IN THE CLAIMS

Amend claims 3 and 7 as follows:

3. (Amended) The scintillation detector of claim 1 wherein a gadolinium [disk] disc covers a rear face of said crystal element.

7. (Amended) The scintillation detector of claim 6 wherein said crystal element is wrapped with a reflective tape, and said gadolinium foil is radially between said reflective tape and said stainless steel or titanium sleeve.